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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/583,764	06/21/2006	Shigeharu Ichiyanagi	292426US40PCT	8724
22850	7590	09/24/2009		
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER DOERRLER, WILLIAM CHARLES	
			ART UNIT 3744	PAPER NUMBER
			NOTIFICATION DATE 09/24/2009	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/583,764	ICHIYANAGI, SHIGEHARU	
	Examiner	Art Unit	
	William C. Doerrler	3744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18 is/are allowed.
- 6) ☒ Claim(s) 1-14, 16 and 19-23 is/are rejected.
- 7) ☒ Claim(s) 15, 17, 24 and 25 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6-21-2006, 11-2-2006</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In both claims, "the cover plate" lacks clear antecedent basis. The claims from which they depend claim a cover wall, but not a cover plate. It is noted that six lines from the end of claim 16, "plat" should be --plate--.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-5,9 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Horiuchi et al (2004/0159121).

Horiuchi et al disclose a heat exchanger having a header formed by a header forming plate 30, a tube supporting plate 20 and intermediate plate 42 with apertures located between the header plate and the tube supporting plate. The header forming plate is shown in the figures to comprise a longitudinal bulge to provide a flow space. The intermediate plate is discussed in detail in paragraph 38. Paragraph 70 states that the heat exchanger can be formed by brazing the plates together (as claimed in claims 1,3 and 4) and that a wall connecting the tube plate to the other plates is used to assemble and seal the assembly. In regard to claims 2 and 10, see paragraph 64, which states that the plates can be stamped.

Claims 1-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Moreau (2002/0134538).

Moreau discloses a heat exchanger formed by connecting a header plate 30, an intermediate plate 22 and a tube connecting plate 16. Paragraphs 19 and 23 states that the plates are brazed together. Figure 3 shows tube connecting plate 16 formed into a wall that encloses the ends of the header forming plate and the intermediate plate. This is also seen to form the engaging portion between the header forming plate and the side wall (where the header portion contacts the wall formed by the bent tube supporting plate. Longitudinal bulges 38 in the header forming plate form the flow passages between the tubes. In regard to claims 2 and 10, paragraph 27 states that the plates are formed by stamping. The header forming plate having a plurality of longitudinal and

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lateral bulges is shown in figure 10. Figure 4 shows one bulge in the header forming plate.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 13,14,16 and 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moreau (2002/0134538).

Moreau discloses applicant's basic inventive concept, a heat exchanger formed by brazing three plates together with a tube connecting plate, an intermediate plate having apertures and a bulged header forming plate with the bulges formed to determine the flow path through the intermediate plate and the tubes, substantially as claimed, with the exception of the number of bulges or cooling a supercritical refrigerant. Moreau states in paragraphs 1 and 2 that the device can be used for automotive air conditioners. It is well known in the heat exchanger art that heat transfer can be modified by changing the flow path of fluid passing through a heat exchanger. It would have been obvious to one of ordinary skill in the art to use the heat exchanger of Moreau with any number of bulges in the header forming plate to form different flow paths for the fluid depending on the desired flow rate of the system and residence time for heat exchange. Changing such factors in demonstrated heat exchangers is considered well within the scope of an ordinary practitioner in the heat exchange art. As

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such, such a change to provide the desired heat transfer is considered obvious to an ordinary practitioner in the art. Official Notice is taken that supercritical refrigeration systems are well known in the refrigeration art and therefore would have been an obvious use for the refrigerant evaporator for automotive use of Moreau.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1,2,5-10,13,14,16 and 19-23 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1,2 and 8-11 of copending Application No. 10/588,209 (as shown in 2007/0131391).

Although the conflicting claims are not identical, they are not patentably distinct from each other because the current claims are either broader in scope or obvious variants of the claims in the other application (which have been allowed, but have not yet issued).

Claims 1,2 9 and 10 of the instant application are broader in scope than the claims in

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the other application, with all claimed limitations of the current claims 1,2,9 and 10 found in claims 1 and 2 of the other application. The other rejected claims differ in the number of bulging portions that control the flow of refrigerant. Such changes are seen as obvious to an ordinary practitioner in the art, as it is well known in the heat exchanger art to modify the flowrate and surface area between fluids to modify the amount of heat transferred between the fluids to provide the desired heat flow. Claims 8-11 of the '209 application claim the use of the claimed heat exchanger in a vehicular super critical refrigeration system, such as currently claimed in claims 19-23.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Allowable Subject Matter

Claims 15,17,24 and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 18 is allowed.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Fredrich, Lyon, Fisher et al, Demuth et al and Kawakubo show heat exchangers with multiple plates and a bulged upper plate to form fluid passages.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William C. Doerrler whose telephone number is (571) 272-4807. The examiner can normally be reached on Monday-Friday 6:30-4:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on (571) 272-4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/William C Doerrler/
Primary Examiner, Art Unit 3744

WCD